

IN THE CLAIMS:

Amend claims 1 and 36-46 and cancel claims 47-48 without prejudice or admission as shown in the following listing of claims, which replaces all previous versions and listings of claims.

1. (currently amended) A method of preparing a sample chip and observing a wall surface thereof, comprising the steps of:

a first step of etching a surrounding area of a preselected portion of a sample ~~and an area surrounding the preselected portion of the sample~~ by irradiating the sample with a focused ion beam to ~~for~~ form a sample chip having a wall surface formed with stepped portions due to differences in etching rate of materials forming the wall surface;

a second step of taking out the sample chip from the sample; and

a third step of observing the wall surface of the sample chip with a scanning probe microscope.

2. - 35. (canceled).

36. (currently amended) A method of preparing a sample chip and observing a wall surface thereof, comprising the steps of:

a first step of etching a surrounding area of a preselected portion of a sample ~~and an area surrounding the preselected portion of the sample~~ by irradiating the sample with a first focused energy beam to form a sample chip;

a second step of picking-up the sample chip from the sample;

a third step of irradiating a wall surface of the sample chip with ~~a second focused energy~~ an argon ion beam to thereby etch the wall surface; and

a fourth step of observing the etched wall surface of the sample chip using a scanning probe microscope.

37. (currently amended) A method of preparing a sample chip and observing a wall surface thereof according to claim 36; ~~wherein the second step further comprises the step of securing the sample chip to a sample chip holder after the sample chip is picked-up from the sample so that the wall surface of the sample chip etched in the third step and observed in the fourth step faces in an upward direction wherein the argon ion beam is irradiated from a tangent direction of the wall surface.~~

38. (currently amended) A method of preparing a sample chip and observing a wall surface thereof according to claim 36; wherein the first focused energy beam is a focused ion beam, ~~and the second focused energy beam is an argon ion beam.~~

39. (currently amended) A method of preparing a sample chip and observing a wall surface thereof according to claim 38; wherein the first step includes the step of processing the sample chip to form the wall surface having stepped portions due to differences in etching rate of materials forming in the wall surface of the sample chip.

40. (currently amended) A method of preparing a sample chip and observing a wall surface thereof, comprising the steps of:

a first step of etching a surrounding area of a preselected portion of a sample ~~and an area surrounding the preselected portion of the sample~~ by irradiating the sample with a first focused energy beam to form a sample chip;

a second step of taking out the sample chip from the sample;

a third step of irradiating a wall surface of the sample chip with an argon ion beam to a second focused energy beam thereby to etch the wall surface;

a fourth step of observing the etched wall surface of the sample chip using a scanning probe microscope;

a fifth step of irradiating the observed wall surface of the sample chip with the first focused energy beam to thereby to etch the observed wall surface; and

a step of repeating the third to fifth steps a preselected number of times.

41. (currently amended) A method of preparing a sample chip and observing a wall surface thereof according to claim 40; wherein the first focused energy beam is a focused ~~ion beam, and the second focused energy beam is an argon ion~~ beam.

42. (currently amended) A method of preparing a sample chip and observing a wall surface thereof according to claim 41; wherein the first step and/or the fifth step includes the step of processing the sample chip to form the wall surface having stepped portions due to differences in etching rate of materials forming in the wall surface of the sample chip.

43. (currently amended) A method of preparing a sample chip and observing a wall surface thereof, comprising the steps of:

a first step of etching a surrounding area of a preselected portion of a sample ~~and an area surrounding the preselected portion of the sample~~ by irradiating the sample with a first focused energy beam to form a sample chip;

a second step of taking out the sample chip from the sample;

a third step of irradiating a wall surface of the sample chip with ~~a second focused energy beam~~ an argon ion beam to thereby ~~to~~ etch the wall surface;

a fourth step of observing the etched wall surface of the sample chip using a scanning probe microscope;

a fifth step of irradiating the observed wall surface of the sample chip with the first focused energy beam to thereby to etch the observed wall surface; and

a step of repeating the fourth and fifth steps a preselected number of times.

44. (currently amended) A method according to claim 43; wherein the first focused energy beam is a focused ion beam, ~~and the second focused energy beam is an argon ion beam.~~

45. (currently amended) A method of preparing a sample chip and observing a wall surface thereof according to claim 44; wherein the first step and/or the fifth step includes the step of processing the sample chip to form the wall surface having the stepped portions due to differences in etching rate of materials forming in the wall surface of the sample chip.

46. (currently amended) A method of preparing a sample chip and observing a wall surface thereof according to claim 43; further comprising the step of forming the sample chip with a rectangular parallelepiped shape in an asymmetric form to facilitate identification of the wall surface of the sample chip in the fourth step.

47. - 48. (canceled).